Sub E5

ABSTRACT OF THE INVENTION

The subject invention relates to an intrastromal corneal insert designed to be meridionally situated in an interlamellar pocket or channel made within the cornea of a mammalian eye. The insert has a shape which, when inserted into the cornea, has a significant meridional dimension and may be used to adjust corneal curvature and thereby correct or improve vision abnormalities such as hyperopia. The inserts may also have a circumferential component to their configuration to allow concurrent correction of other vision abnormalities. The radial insert may be made of a physiologically compatible material, e.g., one or more synthetic or natural, soft, firm, or gelatinous polymers. In addition, the insert or segment may be used to deliver therapeutic or diagnostic agents to the corneal interior or to the interior of the eye.

One or more of the radial inserts of this invention typically are inserted into the cornea so that each subtends a portion of the meridian of the cornea outside of the cornea's central area, e.g., the area through which vision is achieved, but within the cornea's frontal diameter. Typically, the insert is used in arrays of two or more to correct specific visual abnormalities, but may be used in isolation when such is called for. The invention also includes both a minimally invasive procedure for inserting one or more of the devices into the cornea using procedures beginning within the cornea as well as procedures beginning in the sclera.

09/936921.012798